



DEPARTMENT OF THE NAVY
NAVAL AIR WARFARE CENTER TRAINING SYSTEMS DIVISION
12350 RESEARCH PARKWAY
ORLANDO, FLORIDA 32826-3275

IN REPLY REFER TO:
J&A_11_22075

**JUSTIFICATION AND APPROVAL
FOR USE OF OTHER THAN FULL AND OPEN COMPETITION**

1. Contracting Activity.

Naval Air Warfare Center Training Systems Division (NAWC-TSD) - Orlando, FL

2. Description of the Action Being Approved.

This justification and approval authorizes and approves, on a sole source basis, a contract providing for the acquisition of Head Mounted Display (HMD), systems for all seven Virtual Environment Submarine (VESUB) trainers. NVIS, Inc. of Reston, VA is hereby identified as the sole source for these units. This level of effort will ensure that the VESUB trainers remain available for fleet training.

3. Description of Supplies/Services.

This contract will include the purchase of the following HMD systems. (1) nVisor SX60 HMD, qty: 8; (2) Shure Boom Microphone, qty: 8; (3) advanced Video Control Units, qty: 8; (4) Installation and configuration of the Binocular function for the HMD; (5) Installation and configuration of the Advanced Video Control Unit; and (6) Integration of the Shure Boom Microphone with the HMD. The HMD is an adjustable student head-worn video display device that provides realistic 360 degree harbor scenes from the Image Generator Computer to the student. An attached microphone allows the student to give commands to the simulated crew and the attached headphones facilitate realistic shipboard sounds and responses. The HMD has a MiniTrax unit attached that works with the sensors in the overhead Motion Tracking System (MTS) by providing 'location of the student' signals. The HMD receives video signals from the Image Generator PC and provides a virtual reality visual display of a navigational environment corresponding to the observer's simulated location on the bridge of the submarine. A quantity of 8 systems are required to provide students with a realistic training environment which allows them to interact and give commands to a simulated crew. One system will be provided for each of the 7 VESUB trainers (EDM Lab incl.). The 8th unit will be retained as a spare asset.

See Appendix A for Estimated Dollar Value

4. Statutory Authority Permitting Other Than Full and Open Competition.

10 U.S.C. 2304(c)(1), Only one responsible source and no other supplies or services will satisfy agency requirements.

5. Rationale Justifying Use of Cited Statutory Authority.

The current HMDs were procured in 2005 and their hardware components are beginning to fail on a regular basis. This procurement is for the exact replacement of the older SX60 HMD units, which were originally provided by NVIS, Inc. NVIS is the only known source that can satisfy all of the configuration requirements necessary to make these units compatible with existing VESUB hardware and software. NVIS is the sole designer, developer, manufacturer, and integrator of this HMD version. The VESUB trainer system currently uses HMDs and Video Control Units that were modified and configured by NVIS to perform specific functions and interface with other components of the system in a specific manner. Although the systems are mostly hardware intensive and have relatively little software, the NVIS HMDs have proprietary internal circuit boards that were custom designed to allow for video switch rates to occur within one (1) second, whereas the normal switch rate of other models is seven (7) seconds. Furthermore, many other similar units connect directly to video cards, rather than the VCU, which affects the system interface. Any effort to compete and qualify a second source to fulfill this requirement would require extensive re-engineering of the VESUB trainer system to meet these same capabilities, which would result in increased cost to the Government and would critically affect the Government's ability to fulfill training requirements.

6. Description of Efforts Made to Solicit Offers from as Many Offerors as Practicable.

The requirement was synopsized on Navy Electronic Commerce Online (NECO) for a period of 15 days. One response was received from Intevac Photonics Inc. The product proposed by Intevac was assessed and found to be technically unacceptable, as it is not functionally equivalent to the SX60 HMDs. An explanatory response was provided to Intevac Photonics, Inc. and no concerns were expressed.

Additionally, market research was conducted via the internet to determine if a more suitable HMD was available. Multiple HMDs were reviewed and were found to have variable degrees of compatibility with the current VESUB trainer. The most suitable candidate was identified and tested as a prototype. The prototype (NVIS, Inc. ST60 model), was tested for 14 days. At the conclusion of testing the unit was rated technically unsuitable. It was determined that additional functionality and improved technology affected the performance of the trainer. As such, exact HMD replacements are needed.

7. Determination of Fair and Reasonable Cost.

In accordance with FAR 13.106-3(a)(2), the Contracting Officer shall ensure that all supplies and services provided under this contract are procured at a fair and reasonable price.

8. Actions to Remove Barriers to Future Competition.

For the reasons set forth in paragraph 5, NAWCTSD has no plan at this time to compete future contracts for the types of supplies/services covered by this document. If another potential source emerges, that can integrate into the existing trainer without affecting performance, or if funds are made available to re-engineer the VESUB trainer, NAWCTSD will assess whether competition for future requirements is feasible.